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THE PLANT DISEASE REPORTER

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The Plant Disease Survey

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Volume VIII Number 5

August 15, 1924

BUREAU OF PLANT INDUSTRY

UNITED STATES DEPARTMENT OF AGRICULTURE

THE PLANT DISEASE REPORTER

Issued by

THE PLANT DISEASE SURVEY

Vol. VIII August 15, 1924 Number 5

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Porto Rico	
M. T. Cook	Rio Piedras
China	
R. H. Porter	Nanking

*Collaborators acting without pay.
#At State College, Pennsylvania.

Some noteworthy specimens received this year

Tylenchus dipsaci on alfalfa from nine counties in Colorado and from San Juan County, New Mexico.

Ascochyta gossypii on cotton from Brunswick County, Virginia and from North Carolina.

Aphanomyces euteiches on pea from Luzerne County, Pennsylvania, Nassau, Livingston, Erie Counties, New York, and Maryland, Delaware, and New Jersey.

Orobanche ramosa on Coleus sp., Long Island, New York.

Tylenchus tritici on wheat, Anderson County, South Carolina.

Bacterium trifoliorum on red clover, Lafayette, Indiana.

Peronospora sojae on soybean from Kentucky.

Peronospora sp. on peas and sweet clover, Wisconsin.

RED CLOVER POWDERY MILDEW SITUATION

The Survey has received reports of powdery mildew from only thirteen states to date but these reports are scattered widely enough to indicate that by this time the mildew is widespread in the eastern part of the country. The disease is undoubtedly present in many other states but collaborators have failed either to observe or report it. In general it has been somewhat later in appearing this year than last. A few of the more recent notes follow.

New Jersey: On July 8 a trace of mildew was observed in Cumberland County, South Jersey. On July 5 a severe infection was found on red clover in Middlesex County. (Martin and Haenseler, July 12)

Pennsylvania: Powdery mildew was later than usual appearing in the state since it was not observed until June 26 at Media, Delaware County. Apparently this was about the time of the first appearance of the mildew throughout the state since within the next two weeks it was observed in the additional counties of Chester, Lancaster, Daughlin, Cumberland, Blair, Center, Lycoming, and Clinton. The mildew gives every promise of being as severe as usual. (Kirby, July 15)

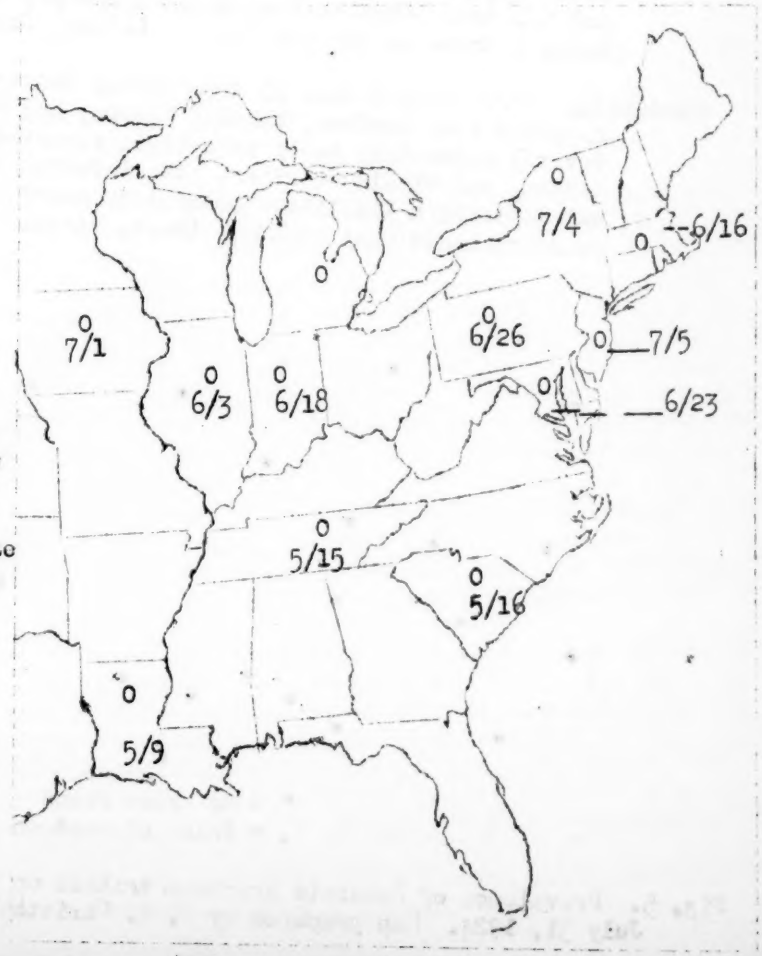

Fig. 4. States from which powdery mildew of red clover has been reported this year with approximate dates of first observation.

Tennessee: General in east Tennessee, probably heavier than ever. No perithecia. (Hesler, July 12)

Michigan: Present; slightly less than last season. (Coons, July 15)

BACTERIAL LEAF SPOT OF RED CLOVER IN INDIANA

"I have noted here at Lafayette, Indiana, quite a little infection of clover by the bacterial disease Bacterium trifoliorum, as recently described by Jones and others. It seems to be quite prevalent in both my own clover plots and those of the Soils and Crops Department." (E. B. Mains, June 18)

This report was accompanied by specimens and the determination verified by one of the persons who originally described the organism.

MORE NOTES ON STEM RUST OF WHEAT

Pennsylvania: On account of the late spring this rust appeared rather later than usual, first being found in very small amounts on July 7 at West Chester, Chester County. Since that time stem rust has been found in every county in which wheat has been examined, i.e. Lancaster, Cumberland, Blair, Center, Lycoming, and Clinton. Stem rust is nowhere severe, there usually only being a trace in any one field. (Kirby, July 15)

Minnesota: First report June 20 from Ramsey County. Light infections reported from Goodhue, Dakota, Waseca, and Brown Counties. Several moderately heavy infections reported from Blue Earth, Waseca, and Steele Counties. The infections were not severe, but in certain localities moderately heavy infections were found on individual plants. (Sect. Plant. Path. July 15)

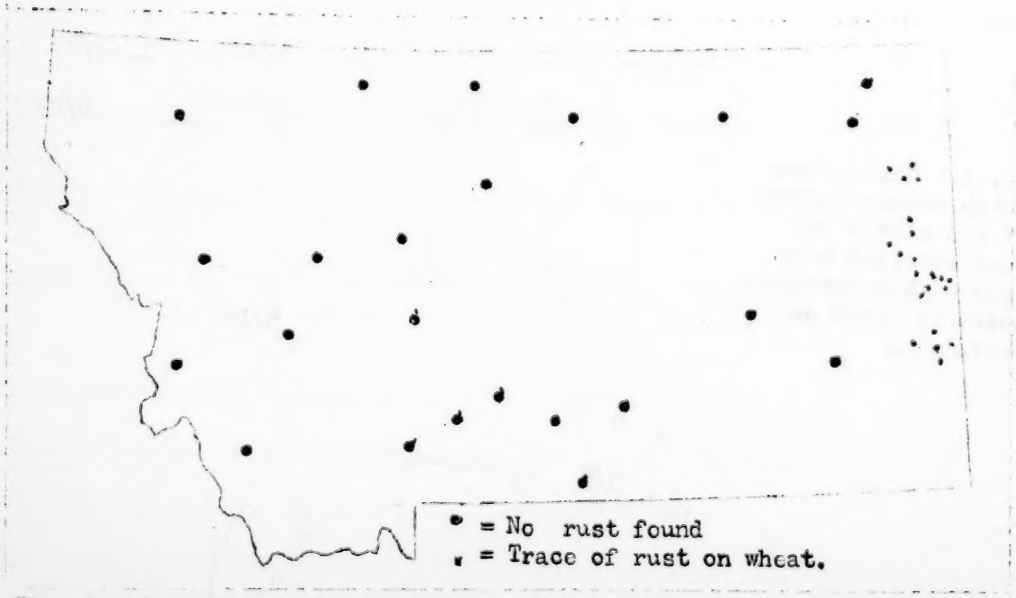

Fig. 5. Prevalence of Puccinia graminis tritici on wheat in Montana, July 31, 1924. Map prepared by W. N. Christopher.

Kansas: Practically absent in the state. No injury reported in any field. (Melchers, July 15)

Colorado: Rather general throughout the spring wheat area. Severity on stem slight. The late spring wheat on the dry land in eastern Colorado has 100% prevalence and 25-30% severity. The majority of the spring wheat in the spring wheat area has advanced far enough to escape any serious damage by the rust. (Learn and Lungren, Aug. 1)

REPORT OF FLAG SMUT OF WHEAT FROM KANSAS

"Flag smut occurred in Leavenworth County, northeastern Kansas the same as last year. Although the percentages in various fields were somewhat lower than in 1923, flag smut was located in many new fields. The amount of smut varied from a trace to approximately 10%. It has been confined to Harvest Queen." (Melchers August 1)

ILLINOIS REPORTS A STRIPE DISEASE OF WHEAT

"In the wheat fields of southern Illinois, and to a lesser extent in northern Illinois, there has appeared this season an unusual and remarkable pathological condition among the plants, which is best described by the term "stripe." It is largely confined to soft, beardless varieties such as Fulz and Red Cross.

"Beginning near the top of the sheath, stripes of dead, yellowish-brown tissue run the length of the leaf, expanding near the tip and causing the death of the tip for 2 or 3 cm. The stripes vary in width according as they involve the tissue adjacent to only a few, or to many of the veins. At times the entire linear half of a leaf may be involved, but the stripes rarely appear to involve or cross over the strong middle vein. Running parallel to the diseased stripes is the normal, healthy, green tissue. So definite are the tans and yellow-browns of the diseased tissue that they form, beside the healthy tissue, a contrast equalled in brilliancy only in the stripe disease of barley.

"The most careful microscopic examinations have failed to reveal the presence of any fungus, or other organism, capable of causing the disease. It seems entirely probable that the condition of the leaves is due to the unusual climatological sequence of our spring.

"Following an excellent start under favorable auspices in April, the growth of the wheat was held in check through May by the coldest weather recorded for years; but during June there has been an alteration of hot droughty and cooler days which, while tremendously stimulating the growth of the crop, has imposed a decided strain on the adaptive powers of the plants, resulting in the death of tissues unable to secure sufficient water for evaporation during the hot days.

"'Stripe', first seen June 5 in Green County, has been found generally prevalent on wheat in Jersey, Calhoun, Green, Madison,

Randolph, Monroe, St. Clair, White, and Jackson Counties. Farther north, in Moultrie, Piatt, Kankakee, and Will Counties, it is less prevalent." (Tehon, July 15)

BASAL GLUME ROT OF WHEAT COMMON IN PENNSYLVANIA

"This disease caused by Bacterium atrofaciens, McCulloch was very common in Pennsylvania this year. There apparently was from 1/2 to 2% of the heads infected in most of the fields in the following counties; Chester, Lancaster, Cumberland, Blair, Center, Lycoming, Clinton, and Erie.

"A trace of this disease was observed at Ithaca, New York on July 1, in the plant breeding plots. (R. S. Kirby, July 15)

RECENT REPORTS ON POTATO DISEASE

Scab

New Jersey: First observed on the Irish Cobbler variety on June 23. On July 3 a three acre piece of Green Mountains was observed with every tuber severely scabbed. In an adjoining field treated with 300 lbs. of sulfur, in 1923, only a trace of scab was found. While only a few potatoes have been dug, the indications are that scab will be less severe than it has been in the past several years, due probably to the fact that there was abundant moisture up to the time the tubers were almost fully developed. (Martin, Aug. 2)

Kansas: Worse than it has been for years, especially in the counties having a dry season. An average of 4% being thrown out on account of scab to make U. S. 1 Grade. Older fields show more infection than new fields. A few fields show every potato infected. In the eastern counties where moisture was plentiful very little scab is present. (Stokdyk, July 15)

Nebraska: Small plantings in eastern part of state have ext[illegible] high yields due to comparatively cool, wet weather in July.

Tip burn and early blight beginning to show severely on late planted fields in East. None showing on mulched potatoes. (Goss, Aug. 1)

Early blight

Maine: Traces seen in some fields the last few days. (Folsom, Aug. 1)

New Jersey: First observed in South Jersey on July 7. More abundant than in the past several years. In Central Jersey the trouble was not severe. (Martin, Aug. 2)

Delaware: Very heavy infections on early crop and generally found with the prematuring of vines. (Adams, Aug. 1)

Ohio: Showing up quite generally in the southern section of the state. (Tilford, July 1)

Illinois: In southern Illinois early blight had not appeared by the 23 of June. On July 6 it was found in Brown County, and since that time has been found quite general northward. A few very severe infections have been seen, but in general the infection appears to be light. (Tehon, August 1)

Minnesota: None observed to date in Red River Valley. Very abundant around Princeton on Bliss Triumphs. (Sect. Plant Path. Aug. 1)

Late blight

New Jersey: Late blight was first observed on the Green Mountain variety on July 1 at Robbinsville. At that time only a few diseased leaves were observed. On July 9 in the same field nearly every plant showed infection. On this same date the disease was found on the Irish Cobbler variety in Middlesex County. On July 14 late blight was observed to some extent on the Irish Cobbler and rather generally on the late varieties in all parts of central Jersey. In south Jersey it was not present. The week following, the weather became dry and hot, this condition has continued with the result that the disease was checked in the fields where it was abundant and in many fields it did not make its appearance. Should the present conditions continue, the losses from late blight will be slight. (Martin, Aug. 2)

Wisconsin: Traces of potato late blight were reported August 11 in Barron and Washburn Counties near Brill. Moisture and temperature conditions have been favorable. (Vaughan, Aug. 14)

Blackleg

Maine: Up to 2 or 3% in fields planted with bruised and untreated seed. (Folsom, Aug. 1)

Connecticut: Occasional here and there in fields even of northern certified seed. Apparently a little more common than usual but not serious. (Clinton, Aug. 1)

New Jersey: First observed July 2. More prevalent than in any of the past six years. Fields were observed with 11% of the plants affected. Found in every field in which seed from one of the northern states was planted. Owing to the wet season the plants were not killed early in their development as is usually the case in New Jersey, but continued to grow until late in the season. In many cases the plant was affected in its entire length. (Martin, Aug. 2)

Illinois: From field diagnosis only, this disease appears very prevalent in southwestern Illinois. It was first seen in Green County on

June 5, where in a half-acre field 5% of the plants were diseased. Two fields in Madison County were badly diseased. Blackleg has also been seen in Monroe and St. Clair Counties. The unusual, cloudy, wet spring was favorable to this disease. (Tehon, Aug. 1)

Michigan: More prevalent than usual. (Kotila, Aug. 1)

Minnesota: Generally prevalent in the Red River Valley in about 50% of the fields examined, varying from a trace to 15% of the plants infected in several fields. The average in infected fields is about 2%. (Sect. Plant Path., Aug. 1)

Kansas: Varies greatly with various lots of seed. Some fields apparently free, others show as high as 30% infection. On one farm seed planted with a two row planter shows a few rows completely dead then a few rows apparently healthy, then one row good, another healthy and so on. It must be due to two lots of seeds. (Stokdyk, July 1)

Rhizoctonia

Michigan: In general more abundant than last year. (Kotila, Aug. 1)

Minnesota: The disease is present in 100% of the fields in the Red River Valley, varying from a trace to practically 100% of the plants infected. Many young plants are completely girdled and killed, others are badly stunted. Undoubtedly this is the most destructive disease of potatoes this year. The estimated reduction in yield for the entire valley is about 5%. (Sect. Plant Path. Aug. 1)

Kansas: In the Eastern part of the state where rainfall has been plentiful there is considerable damage from Rhizoctonia. Yield records there show treated seed yielding from 25 to 50 bushels more per acre than untreated seed. In the western counties in the Kaw Valley, dry weather affected the crop and Rhizoctonia was not as severe. Yield records show from 0 to 25 bushels more on treated plots. (Stokdyk, July 15)

Washington: Rhizoctonia is present in the usual amounts. It causes injury to the underground portion of the stem and thereby interfereswith the production of the crop. It is of much less importance than mosaic and related diseases. (Dana, Aug. 1)

Mosaic

Maine: The several distinct types are all present in commercial fields. The season is dry and sunny, though not hot, and mild mosaic is somewhat masked while leafrolling mosaic is readily determined and rugose mosaic was obvious fromthe first of the season. (Folsom, Aug. 1)

Vermont: Percentage of mosaic large (15-25%) in common stock, but decreasing in fields from certified seed. Percentages of more than 5% are rare. This is due to the distribution of the most disease-free strains. Drought condition in certain sections result in the masking of symptoms and thus make control measures more difficult. Very little of the extreme type of mosaic such as curly dwarf are observed in fields under inspection. (Gilbert, Aug. 1)

New Jersey: Mosaic was first observed on Green Mountains on May 31. This trouble was more abundant than it has been for the past several years, some fields showing as much as 95% infection. In tests of certified and non-certified seed planted side by side the former showed only 3% mosaic as compared with 95% in the latter. (Martin, Aug. 2)

Maryland: Still on the increase. Unable to certify certain varieties for seed. (Temple, Aug. 1)

Michigan: About as usual. Easy to recognize - mottling very evident. (Kotila, Aug. 1)

Minnesota: Not very prevalent in the Red River Valley where Early Ohios are grown chiefly. One field in Kittson County was found with 12%, partly mosaic and partly curly dwarf. All applications for seed certification on Triumphs in Marshall County were rejected because of mosaic, infection ranging from 2 to 40%. Some strains of Triumphs which have hitherto been free from these diseases are badly infected.

Considerable mosaic has been found in Freeborn County also. (Sect. Plant Path. Aug. 1)

Nebraska: Hot dry weather in early season makes mosaic readings impossible in the commercial fields. (Goss, Aug. 1)

Washington: Widespread and causing extensive losses in common seed stocks in all parts of the state. The disease is so severe as to rouse the interest of the grower in obtaining better seed. (Dana, Aug. 1)

Leafroll

Vermont: Serious in uncertified stocks and resulting in marked reduction in yield. As in the case of mosaic, the percentage in fields under inspection is decreasing due to the selection and distribution of disease-free strains. (Gilbert, Aug. 1)

New Jersey: First observed on May 25. Not as prevalent as in the past two years. In a seed test including 30 lots of certified seed, there was an average infection of about 3% as compared with 50% for the rest of the field, planted with non-certified seed. (Martin, Aug. 2)

Michigan: About as usual throughout the state. Some fields from unselected stock show as high as 60%. (Kotila, Aug. 1)

Spindle tuber

Maine: Apparent in commercial fields in all varieties varying in amount from apparent absence or a trace to 100% incidence. (Folsom, Aug. 1)

Vermont: This disease has been recognized in small amounts in Vermont fields. The difficulty of recognizing its vine symptoms makes exact counts uncertain however, and further experimental and extension work is necessary in order to secure effective control. (Gilbert, Aug. 1)

New Jersey: Present to some extent in most every field examined. In some cases 3% of the plants were affected. (Martin, Aug. 2)

Tipburn and hopperburn

New Jersey: This trouble together with hopper-burn was first observed in south Jersey on July 7. Tip burn was not severe during the early growing season but since the advent of hot dry weather, about the middle of July, it has caused serious damage to the late varieties. (Martin, Aug. 2)

Ohio: Due to the extremely wet spring most potatoes were planted late. In late plantings tip burn has not shown up yet. However, in early plantings tip burn is very prevalent. (Tilford, Aug. 1)

Minnesota: Hopperburn abundant in southern half of state since July 15. None observed in Red River Valley up to August 1. (Sect. Plant Path. Aug. 1)

FIRE BLIGHT

The accompanying map, (Fig. 6) shows the states from which reports of fire blight of pome fruits have been received to date, together with the nature of injury caused by the disease, and its prevalence as compared with 1923. It will be noted that in most of the northern states there is less of the disease than was observed last year, Ohio, Michigan, and Wisconsin reporting much less than usual. In Pennsylvania the damage is said to be rather slight. In Minnesota and New York the disease occurs generally and is rather severein some casxs, but is less troublesome than in 1923. Other states reporting the disease as general but not particularly severe are Virginia, and South Carolina. In West Virginia, according to E. C. Sherwood, pears and quinces are attacked severely, but apples are not seriously affected.

On the other hand, reports from Delaware, Illinois, Arkansas, Missouri, and Kansas, some of which have been quoted in previous numbers of the Reporter, state that the disease is more prevalent and severe than it has been for several years.

In addition to those already quoted (see this Reporter 8: 7, 23-24; 34-35; 51-52. 1924) the following reports may be of interest:

Kentucky: Twig blight slight this year. Spur blight was quite severe locally when apples were about the size of cherries.

Estimated that in one orchard near Henderson 1000 bushels were lost at this stage. Slight twig blight present nearly everywhere. (Magill & Valleau, Aug. 11)

Illinois: Very severe this year, worst for a number of years; causing considerable loss by attacking half grown apples. (Anderson, Aug. 1)

South Dakota: Fire blight continues to become steadily worse. Few orchards but have a number of trees affected. Many specimens are received. (Evans, July 24)

New Mexico: Much less severe than last year. All pears killed by a late frost. All pear orchards that were badly blighted were pulled up in spring. Blight was carefully cut out under supervision of a hired inspector. (Crawford, Aug. 1)

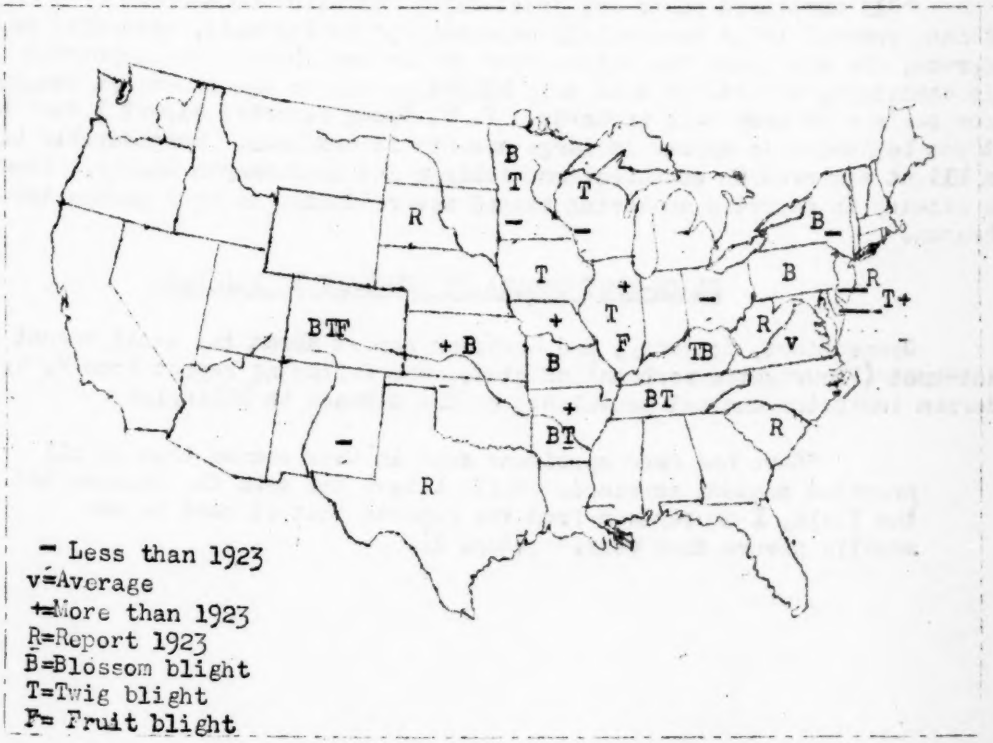

Fig. 6. Occurrence, nature of injury, and prevalence as compared with 1923 of fire blight.

BACTERIAL LEAFSPOT OF PEACH (BACTERIUM PRUNI)

Bacterial leafspot of peach has been reported so far from New York, Delaware, Tennessee, South Carolina, Mississippi, Texas, and Illinois. Reports from Delaware and Illinois, apparently the only states in which it has been causing more than slight damage, are quoted below:

Delaware: Leaf and fruit infection found on Hale variety May 28. During June leaf defoliation has been severe in many orchards. Very prevalent on Hale, Elberta, and Early Elberta. Many growers consider it the most serious plant disease they have experienced. (Adams)

Illinois: Unusually serious this year. Worst it has ever been, especially in southern end of state where the large peach crop is this season. Serious on fruit of Hale and causing defoliation of Hale and Elberta. (Anderson, Aug. 1)

BROWN ROT OF PLUM

"All unsprayed plums are practically worthless on account of brown rot, and many sprayed trees have a high percentage," in Illinois, according to H. W. Anderson, who considers the wet weather of May and June to be responsible for this condition, and states that twig blighting due to the brown rot fungus has been serious in many home orchards. V. H. Young reported August 1 that brown rot was beginning to appear in large amounts in Arkansas. Considerable blossom blight occurred in southwestern Michigan and in Hennepin County, Minnesota. The disease is reported as having caused severe damage to home garden trees in Nebraska.

BLACK-KNOT UNUSUALLY ABUNDANT IN ILLINOIS

Connecticut, Kentucky, and Michigan report about the usual amount of black-knot (Plowrightia morbosa) of plum. The following report from H. W. Anderson indicates unusual prevalence of the disease in Illinois:

"Have had more specimens sent in this season than in all previous seasons combined. While I have not seen the disease in the field, I am certain from the reports that it must be unusually severe this year." (Aug. 1)

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